

Remarks

The Office Action mailed November 15, 2005 has been carefully reviewed and the foregoing amendment has been made in consequence thereof.

Claims 1-22 are now pending in this application. Claims 1-22 stand rejected.

The rejection of Claims 4 and 10 under 35 U.S.C. § 112, second paragraph, is respectfully traversed. Claims 4 and 10 have been amended to address the antecedent issues noted in the Office Action. For the reasons set forth above, Applicants respectfully request that the Section 112 rejections of Claims 4 and 10 be withdrawn.

The rejection of Claims 1-7, 10, 11, 13-14, 17-18 under 35 U.S.C. § 103 as being unpatentable over Derman (U.S. Patent No. 6,405,107) in view of Langner et al. (U.S. Patent No. 6,867,711) is respectfully traversed.

Derman describes an instrument display where the outer circle of the display (14) is the conventional Compass Rose. Around the periphery are the standard 360 degrees of the compass, with the cardinal points and other 30 degree positions indicated. The display also illustrates a symbolic aircraft (15), the artificial horizon (16), the bank indicators (18), and a heading "bug" (19). Further, the display includes the speed circle (17) and the standard rate turn indicator (20). The speed circle (17) expands and contracts proportional to either the aircraft ground speed, if no wind vector is present, or the aircraft air speed. The standard rate turn bank angle (20) adjusts itself to show the bank required to make a standard rate (2 minute) turn at the aircraft speed. Column 13, lines 1-22).

Langner et al. describe controls that permit increased integration within the cockpit and provide customized presentations of flight information data on display 140 of MFD 100. For example, overlay controls 114 located on the bottom side 103 of the bezel 101, permit the pilot to adjust the main display 140 by overlaying graphical data related to weather, traffic, and terrain. Column 6, lines 36-43.

Claim 1 recites a method for displaying attitude, heading, and navigation data on a single display comprising “overlaying a portion of the terrain display with a compass rose display” and “superimposing an attitude direction indicator with the compass rose display, the attitude direction indicator referenced to a center of the compass rose.”

Derman in view of Langner et al. do not describe, nor suggest, a method that includes overlaying a portion of the terrain display with a compass rose display and superimposing an attitude direction indicator with the compass rose display, the attitude direction indicator referenced to a center of the compass rose. Rather, Derman describes an attitude direction indicator within a display of a compass rose, though not referenced to the center of the compass rose, and Langer et al. describe a flight display configured with terrain data, but not a terrain display that is overlaid with a compass rose display. See Figure 1D.

For the reasons set forth above, Claim 1 is submitted to be patentable over Derman in view of Langner et al.

Claims 2-5 depend, directly or indirectly, from independent Claim 1. When the recitations of Claims 2-5 are considered in combination with the recitations of Claim 1, Applicants submit that dependent Claims 2-5 likewise are patentable over Derman in view of Langner et al.

Claim 6 recites a unit for displaying a navigational display, where the unit is configured to display a terrain, “overlay a portion of the terrain display with a compass rose, and superimpose an attitude direction indicator with the compass rose, the attitude direction indicator referenced to a center of the compass rose.”

Derman in view of Langner et al. do not describe, nor suggest, a unit configured to overlay a portion of the terrain display with a compass rose and superimpose an attitude direction indicator with the compass rose display, the attitude direction indicator referenced to a center of the compass rose. Rather, Derman describes an attitude direction indicator within a display of a compass rose, though not referenced to the center of the compass rose, and Langer et al. describe a flight display configured with terrain data, but not a terrain display that is overlaid with a compass rose display. See Figure 1D.

For the reasons set forth above, Claim 6 is submitted to be patentable over Derman in view of Langner et al.

Claims 7, 10, and 11 depend, directly or indirectly, from independent Claim 6. When the recitations of Claims 7, 10, and 11 are considered in combination with the recitations of Claim 6, Applicants submit that dependent Claims 7, 10, and 11 likewise are patentable over Derman in view of Langner et al.

Independent Claim 13 recites a visual display format for a navigational system that comprises “a compass rose overlaying a portion of said terrain display” and “an attitude direction indicator superimposed with said compass rose, said attitude direction indicator referenced to a center of said compass rose.”

Derman in view of Langner et al. do not describe, nor suggest, a visual display format for a navigational system that includes a compass rose overlaying a portion of the terrain display and an attitude direction indicator superimposed with the compass rose, the attitude direction indicator being referenced to a center of the compass rose. Rather, Derman describes an attitude direction indicator within a display of a compass rose, though not referenced to the center of the compass rose, and Langer et al. describe a flight display configured with terrain data, but not a terrain display that is overlaid with a compass rose display. See Figure 1D.

For the reasons set forth above, Claim 13 is submitted to be patentable over Derman in view of Langner et al.

Claims 14, 17, and 18 depend, directly or indirectly, from independent Claim 13. When the recitations of Claims 14, 17, and 18 are considered in combination with the recitations of Claim 13, Applicants submit that dependent Claims 14, 17, and 18 likewise are patentable over Derman in view of Langner et al.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 1-7, 10, 11, 13-14, 17-18 be withdrawn.

The rejection of Claims 8 and 15 under 35 U.S.C. § 103 as being unpatentable over Derman in view of Langner et al. and Chen et al. (U.S. Patent Application Publication No. 2003/0193410) is respectfully traversed.

Chen et al. describe a flight information display that specifies a region in front of the aircraft to show terrain, waypoints and runways, on a vertical profile display. The terrain depicted on the display is the highest terrain that is within a specified swath of terrain along the direction of the airplane's track. If the flight deck also contains on a separate top-down display of terrain in front of the airplane to the compass rose the distance depicted on the side-view display preferably at least half the range that is shown on the top-down display of terrain in front of the airplane to the compass rose; but is preferably no greater than 2 times the range. Paragraphs [0023]-[0025].

Claim 8 depends from Claim 6 which recites a unit for displaying a navigational display, where the unit is configured to display a terrain, “overlay a portion of the terrain display with a compass rose, and superimpose an attitude direction indicator with the compass rose, the attitude direction indicator referenced to a center of the compass rose.”

Derman in view of Langner et al. and Chen et al. do not describe, nor suggest, a unit configured to overlay a portion of the terrain display with a compass rose and superimpose an attitude direction indicator with the compass rose display, the attitude direction indicator referenced to a center of the compass rose. Rather, Derman describes an attitude direction indicator within a display of a compass rose, though not referenced to the center of the compass rose, Langer et al. describe a flight display configured with terrain data, but not a terrain display that is overlaid with a compass rose display, and Chen et al. describe a top down display of terrain.

For the reasons set forth above, Claim 6 is submitted to be patentable over Derman in view of Langner et al. and Chen et al.

Claim 8 depends from independent Claim 6. When the recitations of Claim 8 are considered in combination with the recitations of Claim 6, Applicants submit that dependent Claim 8 likewise is patentable over Derman in view of Langner et al. and Chen et al.

Claim 15 depends from independent Claim 13 which recites a visual display format for a navigational system that comprises “a compass rose overlaying a portion of said terrain display” and “an attitude direction indicator superimposed with said compass rose, said attitude direction indicator referenced to a center of said compass rose.”

Derman in view of Langner et al. and Chen et al. do not describe, nor suggest, a visual display format for a navigational system that includes a compass rose overlaying a portion of the terrain display and an attitude direction indicator superimposed with the compass rose, the attitude direction indicator being referenced to a center of the compass rose. Rather, Derman describes an attitude direction indicator within a display of a compass rose, though not referenced to the center of the compass rose, Langer et al. describe a flight display configured with terrain data, but not a terrain display that is overlaid with a compass rose display, and Chen et al. describe a top down display of terrain.

For the reasons set forth above, Claim 13 is submitted to be patentable over Derman in view of Langner et al. and Chen et al.

Claim 15 depends from independent Claim 13. When the recitations of Claim 15 are considered in combination with the recitations of Claim 13, Applicants submit that dependent Claim 15 likewise is patentable over Derman in view of Langner et al. and Chen et al.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 8 and 15 be withdrawn.

The rejection of Claims 9 and 16 under 35 U.S.C. § 103 as being unpatentable over Derman in view of Langner et al. and von Viebahn et al. (U.S. Patent No. 6,054,937) is respectfully traversed.

von Viebahn et al. describe screen images in various flight situations. Referring to Column 4, lines 24-33, two markers 21, 22 are provided for indicating the pitch angle. The markers 21, 22 indicate the pitch angle firstly by their position in relation to the horizon and secondly numerically. The markers 21, 22 are transparent, so that the background is visible through the markers. Particularly in the range of smaller pitch angles, when the horizon 1 passes

through the markers 21, 22, a change in sign of the pitch angle is easily identifiable by a color change inside the markers.

Claim 9 depends from Claim 6 which recites a unit for displaying a navigational display, where the unit is configured to display a terrain, “overlay a portion of the terrain display with a compass rose, and superimpose an attitude direction indicator with the compass rose, the attitude direction indicator referenced to a center of the compass rose.”

Derman in view of Langner et al. and von Viebahn et al. do not describe, nor suggest, a unit configured to overlay a portion of the terrain display with a compass rose and superimpose an attitude direction indicator with the compass rose display, the attitude direction indicator referenced to a center of the compass rose. Rather, Derman describes an attitude direction indicator within a display of a compass rose, though not referenced to the center of the compass rose, Langer et al. describe a flight display configured with terrain data, but not a terrain display that is overlaid with a compass rose display, and von Viebahn et al. describe pitch angle markers on a flight display that are transparent.

For the reasons set forth above, Claim 6 is submitted to be patentable over Derman in view of Langner et al. and von Viebahn et al.

Claim 9 depends from independent Claim 6. When the recitations of Claim 9 are considered in combination with the recitations of Claim 6, Applicants submit that dependent Claim 9 likewise is patentable over Derman in view of Langner et al. and von Viebahn et al.

Claim 16 depends from independent Claim 13 which recites a visual display format for a navigational system that comprises “a compass rose overlaying a portion of said terrain display” and “an attitude direction indicator superimposed with said compass rose, said attitude direction indicator referenced to a center of said compass rose.”

Derman in view of Langner et al. and von Viebahn et al. do not describe, nor suggest, a visual display format for a navigational system that includes a compass rose overlaying a portion of the terrain display and an attitude direction indicator superimposed with the compass rose, the attitude direction indicator being referenced to a center of the compass rose. Rather, Derman

describes an attitude direction indicator within a display of a compass rose, though not referenced to the center of the compass rose, Langer et al. describe a flight display configured with terrain data, but not a terrain display that is overlaid with a compass rose display, and von Viebahn et al. describe pitch angle markers on a flight display that are transparent.

For the reasons set forth above, Claim 13 is submitted to be patentable over Derman in view of Langner et al. and von Viebahn et al.

Claim 16 depends from independent Claim 13. When the recitations of Claim 16 are considered in combination with the recitations of Claim 13, Applicants submit that dependent Claim 16 likewise is patentable over Derman in view of Langner et al. and von Viebahn et al.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 9 and 16 be withdrawn.

The rejection of Claims 12 and 19 under 35 U.S.C. § 103 as being unpatentable over Derman in view of Langner et al. and Naimer et al. (U.S. Patent No. 6,822,624) is respectfully traversed.

Naimer et al. describe a display device 400 that has an underlay image depicting a runway and associated geographical details. The underlay image displayed by PFD 400 is generated using the display generation system where the image of a particular runway at a particular airport is stored in an image database. The geography of an entire airport, including particular landmarks, towers, location of hangars, the topology of paths connecting runways, natural obstacles, man-made obstacles can all be stored in the image database.

Claim 12 depends from Claim 6 which recites a unit for displaying a navigational display, where the unit is configured to display a terrain, “overlay a portion of the terrain display with a compass rose, and superimpose an attitude direction indicator with the compass rose, the attitude direction indicator referenced to a center of the compass rose.”

Derman in view of Langner et al. and Naimer et al. do not describe, nor suggest, a unit configured to overlay a portion of the terrain display with a compass rose and superimpose an attitude direction indicator with the compass rose display, the attitude direction indicator

referenced to a center of the compass rose. Rather, Derman describes an attitude direction indicator within a display of a compass rose, though not referenced to the center of the compass rose, Langer et al. describe a flight display configured with terrain data, but not a terrain display that is overlaid with a compass rose display, and Naimer et al. describe that that an aircraft display can display runway and other geographical details beneath a display of various aircraft parameters.

For the reasons set forth above, Claim 6 is submitted to be patentable over Derman in view of Langner et al. and Naimer et al.

Claim 12 depends from independent Claim 6. When the recitations of Claim 12 are considered in combination with the recitations of Claim 6, Applicants submit that dependent Claim 12 likewise is patentable over Derman in view of Langner et al. and Naimer et al.

Claim 19 depends from independent Claim 13 which recites a visual display format for a navigational system that comprises “a compass rose overlaying a portion of said terrain display” and “an attitude direction indicator superimposed with said compass rose, said attitude direction indicator referenced to a center of said compass rose.”

Derman in view of Langner et al. and Naimer et al. do not describe, nor suggest, a visual display format for a navigational system that includes a compass rose overlaying a portion of the terrain display and an attitude direction indicator superimposed with the compass rose, the attitude direction indicator being referenced to a center of the compass rose. Rather, Derman describes an attitude direction indicator within a display of a compass rose, though not referenced to the center of the compass rose, Langer et al. describe a flight display configured with terrain data, but not a terrain display that is overlaid with a compass rose display, and Naimer et al. describe that that an aircraft display can display runway and other geographical details beneath a display of various aircraft parameters.

For the reasons set forth above, Claim 13 is submitted to be patentable over Derman in view of Langner et al. and Naimer et al.

Claim 19 depends from independent Claim 13. When the recitations of Claim 19 are considered in combination with the recitations of Claim 13, Applicants submit that dependent Claim 19 likewise is patentable over Derman in view of Langner et al. and Naimer et al.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 12 and 19 be withdrawn.

In addition to the reasons given above, Applicants also respectfully submit that the various Section 103 rejections of the presently pending claims is not a proper rejection. As is well established, obviousness cannot be established by combining the teachings of the cited art to produce the claimed invention, absent some teaching, suggestion, or incentive supporting the combination. None of Derman, Langner et al., Chen et al., von Viebahn et al., and Naimer et al., considered alone or in combination, describe or suggest the claimed combination. Furthermore, in contrast to the assertion within the Office Action, Applicants respectfully submit that it would not be obvious to one skilled in the art to combine Derman, Langner et al., Chen et al., von Viebahn et al., and Naimer et al. in the various combinations set forth in the November 15, 2005 Office Action, because there is no motivation to combine the references suggested in the art. Additionally, the Examiner has not pointed to any prior art that teaches or suggests to combine the disclosures, other than Applicant's own teaching. Rather, only the conclusory statements similar to "it would have been obvious to display terrain data as suggested by Langner in conjunction with an ADI as disclosed by Derman with associated compass rose..." and "it would have been obvious to use a format for display as suggested by Chen in conjunction with a terrain display as suggested by Derman and Langner in order to make terrain distinctions more easy to see..." suggests combining the disclosures.

As the Federal Circuit has recognized, obviousness is not established merely by combining references having different individual elements of pending claims. Ex parte Levingood, 28 U.S.P.Q.2d 1300 (Bd. Pat. App. & Inter. 1993). MPEP 2143.01. Rather, there must be some suggestion, outside of Applicant's disclosure, in the prior art references themselves to combine such references, and a reasonable expectation of success must be both found in the prior art, and not based on Applicant's disclosure. In re Vaeck, 20 U.S.P.Q.2d 1436

(Fed. Cir. 1991). In the present case, neither a suggestion nor motivation to combine the prior art disclosures, nor any reasonable expectation of success has been shown.

Furthermore, it is impermissible to use the claimed invention as an instruction manual or “template” to piece together the teachings of the cited art so that the claimed invention is rendered obvious. Specifically, one cannot use hindsight reconstruction to pick and choose among isolated disclosures in the art to deprecate the claimed invention. Further, it is impermissible to pick and choose from any one reference only so much of it as will support a given position, to the exclusion of other parts necessary to the full appreciation of what such reference fairly suggests to one of ordinary skill in the art. The present Section 103 rejection is based on a combination of teachings selected from multiple patents in an attempt to arrive at the claimed invention. Since there is no teaching or suggestion in the cited art for the combination, the Section 103 rejection appears to be based on a hindsight reconstruction in which isolated disclosures have been picked and chosen in an attempt to deprecate the present invention. Of course, such a combination is impermissible, and for this reason, along with the reasons given above, Applicants request that the Section 103 rejections be withdrawn.

The rejection of Claims 20-22 under 35 U.S.C. § 103 as being unpatentable over Langner et al. is respectfully traversed.

Langner et al. is described above. Claim 20 recites a display control device that comprises “a processor structured for receiving terrain awareness information and samples of current heading and attitude” and “one or more algorithms resident on said processor for generating, as a function of the current heading and attitude, one or more display control signals for causing a display device to display a portion of the terrain awareness information and information relating to heading and attitude, the display control signals causing the attitude information to be referenced to a center of the heading information, and the attitude and heading information to overlay the terrain awareness information.”

Langner et al. do not describe, nor suggest, one or more display control signals for causing a display device to display a portion of the terrain awareness information and information relating to heading and attitude where the attitude information is referenced to a center of the heading information. Rather, Langner et al. describe controls that permit increased

integration within the cockpit and provide customized presentations of flight information data on a MFD, but not display control signals that reference attitude information to a center of the heading information. For these reasons, Claim 20 is submitted to be patentable over Langner et al.

Claims 21 and 22 depend from independent Claim 20. When the recitations of Claims 21 and 22 are considered in combination with the recitations of Claim 20, Applicants submit that dependent Claims 21 and 22 likewise are patentable over Langner et al.

For the reasons set forth above, Applicants respectfully request that the Section 103 rejection of Claims 20-22 be withdrawn.

In view of the foregoing amendments and remarks, all the claims now active in this application are believed to be in condition for allowance. Reconsideration and favorable action is respectfully solicited.

Respectfully Submitted,



Robert E. Slenker
Registration No. 45,112
ARMSTRONG TEASDALE LLP
One Metropolitan Square, Suite 2600
St. Louis, Missouri 63102-2740
(314) 621-5070